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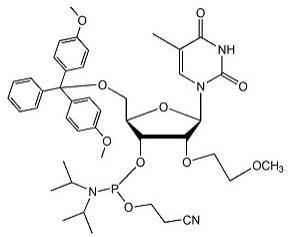
CERTIFICATE OF ANALYSIS

PRODUCT NAME:	TheraPure™ 2'-MOE-T Phosphoramidite
PRODUCT NUMBER:	27-1021-82
LOT NUMBER:	YC1712
BULK NUMBER:	XF0295
DESCRIPTION:	5′-*O*-(4,4′-Dimethoxytrityl)-2′-O-methoxyethyl-thymidine-3′-O-(β-cyanoethyl-N,N-diisopropyl) phosphoramidite
CHEMICAL FORMULA:	$C_{43}H_{55}N_4O_{10}P$
MOLECULAR WEIGHT:	819.0 g/mol
CAS NUMBER:	163878-63-5
STORE:	-20°C
SHIP:	Ambient
MANUFACTURE DATE:	07/12/2022
RETEST DATE:	01/12/2026
EXPIRATION DATE:	07/11/2026

STRUCTURE



ANALYSIS RESULTS

Property	Specification Limits	Observed Value
Appearance	White to pale yellow powder	Pass
Appearance	Color intensity of the powder must not exceed Pantone #P1-4U or #P4-2U	Pass
Solution Clarity	0.2M solution in acetonitrile is free from undissolved particulate	Pass
HPLC Purity	≥ 99%	100%
Identification	Monoisotopic masses (MoIM) of the sample and standard agree within ± 0.2 amu in both negative and positive ionization modes	Pass
Identification	Retention times (RT) of both main peaks of the sample and standard agree within 0.2 minutes	Pass
HPLC Impurity	Critical Impurity CI ≤ 0.15% [2'-O-ethyl]	Pass
	Critical Impurity CXV ≤ 0.15% [2'-O-butyl]	Pass
	Critical Impurity CXIII ≤ 0.15% [2'-O-methoxy ethoxy ethyl]	Pass
	Critical Impurity XI ≤ 0.15% [Amiditoethyl-amidite]	Pass
	Critical Impurity XVIII ≤ 0.15% [Amiditoethyl-amidite-dimer]	Pass
	Critical Impurity C ≤ 0.15% [2'-O-ethoxyethyl]	Pass
	Critical Impurity CIII ≤ 0.15% [2'-5' dimer]	Pass
	Critical Impurity CII ≤ 0.15% [2'-O-methyl]	Pass
	Critical Impurity V ≤ 0.15% [Inverted isomer]	Pass
	Any Unspecified Critical Impurity ≤ 0.15%	Pass
	Total Critical Impurities ≤ 0.60%	Pass
M-11 Impurity	≤ 0.01% (3'-O- Isopropyl-N,N-diisopropylphosphoramidite)	Pass
^{31}P NMR Purity	≥ 99%	100%
	Trivalent PIII Species by ^{31}P NMR Report Value	0.0%
	Peak at ~146 ppm is ≤ 0.10% (HMT phosphoramidite impurity; MW 506.58)	Pass
Water Content	≤ 0.3%	0.1%

Total Residual Solvents	≤ 4.0%	1.8%
Material Origin (TSE/BSE)	No known animal-derived materials were used in the manufacture of this product	Pass

*A critical impurity is any component other than the target compound that contains a phosphoramidite moiety and a DMT (or equivalent acid labile) protecting group. Any unknown impurity is considered to be critical.

Phosphoramidites are sensitive to environmental conditions when in powder or liquid form. Take precautions to avoid potential precipitation, degradation or hydrolysis that can affect performance or delivery of the phosphoramidite during synthesis. Control temperature, humidity, and exposure time to air for both the phosphoramidite and diluent.

QC Release By: Gina Kogutkiewicz
Sr. Manager, Business Systems & Quality Compliance

QC Release Date: 6/23/2022

Revision 14